

In the Specification:

Please substitute the following pages to the Specification: **(Replacement**
pages 4, 5, 23 and 137 - 170).

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human respiratory syncytial virus (RSV), human parainfluenza virus (HPV), measles virus (MeV) and simian immunodeficiency virus (SIV).

BRIEF DESCRIPTION OF THE TABLES

5 The invention will be better understood by reference to the Tables, in which:

Table 1 lists the commonly occurring amino acids together with their one letter and three letter abbreviations, and common protecting groups.

10 Table 2 shows DP178 carboxy truncations including SEQ ID NO:1 and 87-116.

Table 3 shows DP178 amino truncations including SEQ ID NO:1 and 117-146.

Table 4 shows DP107 carboxy truncations including SEQ ID NO:2 and 147-178.

15 Table 5 shows DP107 amino truncations including SEQ ID NO:2 and 179-210.

Table 6 shows HIV-2_{NIH2} DP178 analog carboxy truncations including SEQ ID NO:7 and 211-240.

20 Table 7 shows HIV-2_{NIH2} DP178 analog amino truncations including SEQ ID NO:7 and 241-270.

Table 8 shows RSV F2 region DP107 analog carboxy truncations including SEQ ID NO:13 and 271-312.

Table 9 shows RSV F2 region DP107 analog amino truncations including SEQ ID NO:313-353.

25 Table 10 shows RSV F1 region DP178 analog carboxy truncations including SEQ ID NO:354-385.

Table 11 shows RSV F1 region DP178 analog amino truncations including SEQ ID NO:386-416.

30 Table 12 shows HPV3 F1 region DP 178 analog carboxy truncations including SEQ ID NO:417-446.

Table 13 shows HPV3 F1 region DP 178 analog amino truncations including SEQ ID NO:447-475.

Table 14 shows HPV3 F1 region DP107 analog carboxy truncations including SEQ ID NO:476-504.

5 Table 15 shows HPV3 F1 region DP107 analog amino truncations including SEQ ID NO:505-533.

Table 16 shows representative anti-RSV peptides of SEQ ID NO:15-30.

Table 17 shows representative anti-HPV3 peptides of SEQ ID NO:33-62.

Table 18 shows representative anti-SIV peptides of SEQ ID NO:64-73.

10 Table 19 shows representative anti-MeV peptides of SEQ ID NO:76-86.

BRIEF DESCRIPTION OF SEQUENCE LISTING

The invention will be better understood by reference to the Sequence Listing, in which:

15

SEQ ID NO:1 shows the peptide sequence of DP178;

SEQ ID NO:2 shows the peptide sequence of DP107;

SEQ ID NO:3-7 show peptide sequences of certain DP178 analogs;

SEQ ID NO:8-9 show peptide sequences of certain DP107 analogs;

20 SEQ ID NO:10-30 show the peptide sequences of RSV F1 region and F2 region corresponding to DP178 and DP107, and representative anti-RSV peptides;

SEQ ID NO:31-62 show the peptide sequences of HPIV3 F1 region corresponding to DP178 and DP107, and representative anti-HPIV3 peptides;

25 SEQ ID NO:63-73 show peptide sequences of SIV corresponding to DP178 and representative anti-SIV peptides;

SEQ ID NO:74-86 show peptide sequences of MeV corresponding to DP178 and representative anti-MeV peptides;

SEQ ID NO:87-116 show peptide sequences of DP178 carboxy truncations;

30 SEQ ID NO:117-146 show peptide sequences of DP178 amino truncations;

ID NO:52 and SEQ ID NO:58 each have amino acid sequences contained within the peptide of SEQ ID NO:31 and each has been shown to exhibit anti-HPIV-3 activity, in particular, inhibiting fusion and syncytia formation between HPIV-3-infected Hep2 cells and uninfected CV-1W cells at concentrations of less than 1 $\mu\text{g/ml}$.

The peptide of SEQ ID NO:32 is also derived from the F1 region of HPIV-3 and was identified in U.S. Patent Nos. 6,103,236 and 6,020,459 using the search motifs described as corresponding to DP178 (i.e., "DP178-like"). The peptides of SEQ ID NO:35 and SEQ ID NO:38 to SEQ ID NO:42 each have amino acid sequences contained within the peptide of SEQ ID NO:32 and each also has been shown to exhibit anti-HPIV-3 activity, in particular, inhibiting fusion and syncytia formation between HPIV-3-infected Hep2 cells and uninfected CV-1W cells at concentrations of less than 1 $\mu\text{g/ml}$.

C. Anti-MeV Peptides

Anti-MeV peptides are DP178 and/or DP107 analogs identified from corresponding peptide sequences in measles virus (MeV) which have further been identified to inhibit viral infection by the measles virus. Such peptides of particular interest include the peptides of Table 19 and peptides of SEQ ID NO:74 to SEQ ID NO:86. Of particular interest are the peptides listed below.

HRIDLGPPISLERLDVGTNLGNIAIAKLEAKELLE (SEQ ID NO:77)
IDLGPPISLERLDVGTNLGNIAIAKLEAKELLESS (SEQ ID NO:79)
LGPPISLERLDVGTNLGNIAIAKLEAKELLESSDQ (SEQ ID NO:81)
PISLERLDVGTNLGNIAIAKLEAKELLESSDQILR (SEQ ID NO:84)

Sequences derived from measles virus were identified in U.S. Patent Nos. 6,103,236 and 6,020,459 using the search motifs described as corresponding to

TABLE 2

| DP178 CARBOXY TRUNCATIONS | | |
|---------------------------|-------------------------------|---------------|
| 5 | YTS | |
| | YTSL | |
| | YTSLI | |
| | YTSLIH | SEQ ID NO:116 |
| | YTSLIHS | SEQ ID NO:115 |
| 10 | YTSLIHSL | SEQ ID NO:114 |
| | YTSLIHSLI | SEQ ID NO:113 |
| | YTSLIHSLIE | SEQ ID NO:112 |
| | YTSLIHSLIEE | SEQ ID NO:111 |
| | YTSLIHSLIEES | SEQ ID NO:110 |
| 15 | YTSLIHSLIEESQ | SEQ ID NO:109 |
| | YTSLIHSLIEESQN | SEQ ID NO:108 |
| | YTSLIHSLIEESQNNQ | SEQ ID NO:107 |
| | YTSLIHSLIEESQNNQQ | SEQ ID NO:106 |
| | YTSLIHSLIEESQNNQQE | SEQ ID NO:105 |
| 20 | YTSLIHSLIEESQNNQQEK | SEQ ID NO:104 |
| | YTSLIHSLIEESQNNQQEKN | SEQ ID NO:103 |
| | YTSLIHSLIEESQNNQQEKNE | SEQ ID NO:102 |
| | YTSLIHSLIEESQNNQQEKNEQ | SEQ ID NO:101 |
| | YTSLIHSLIEESQNNQQEKNEQE | SEQ ID NO:100 |
| 25 | YTSLIHSLIEESQNNQQEKNEQEL | SEQ ID NO:99 |
| | YTSLIHSLIEESQNNQQEKNEQELL | SEQ ID NO:98 |
| | YTSLIHSLIEESQNNQQEKNEQELLE | SEQ ID NO:97 |
| | YTSLIHSLIEESQNNQQEKNEQELLEL | SEQ ID NO:96 |
| | YTSLIHSLIEESQNNQQEKNEQELLELD | SEQ ID NO:95 |
| 30 | YTSLIHSLIEESQNNQQEKNEQELLELDK | SEQ ID NO:94 |

| | | |
|---|---|---------------------|
| | YTSLIHS�IEESQNQQEKNEQELLELDKW_____ | <u>SEQ ID NO:93</u> |
| | YTSLIHS�IEESQNQQEKNEQELLELDKWA_____ | <u>SEQ ID NO:92</u> |
| | YTSLIHS�IEESQNQQEKNEQELLELDKWAS_____ | <u>SEQ ID NO:91</u> |
| | YTSLIHS�IEESQNQQEKNEQELLELDKWASL_____ | <u>SEQ ID NO:90</u> |
| 5 | YTSLIHS�IEESQNQQEKNEQELLELDKWASLW_____ | <u>SEQ ID NO:89</u> |
| | YTSLIHS�IEESQNQQEKNEQELLELDKWASLWN_____ | <u>SEQ ID NO:88</u> |
| | YTSLIHS�IEESQNQQEKNEQELLELDKWASLWNW_____ | <u>SEQ ID NO:87</u> |
| | YTSLIHS�IEESQNQQEKNEQELLELDKWASLWNWF_____ | <u>SEQ ID NO:1</u> |

10 The one letter amino acid code of Table 1 is used.

TABLE 3

| DP178 AMINO TRUNCATIONS | | |
|-------------------------|----------------------------|---------------|
| 5 | NWF | |
| | WNWF | |
| | LWNWF | |
| 10 | SLWNWF | SEQ ID NO:146 |
| | ASLWNWF | SEQ ID NO:145 |
| | WASLWNWF | SEQ ID NO:144 |
| | KWASLWNWF | SEQ ID NO:143 |
| | DKWASLWNWF | SEQ ID NO:142 |
| 15 | LDKWASLWNWF | SEQ ID NO:141 |
| | ELDKWASLWNWF | SEQ ID NO:140 |
| | LELDKWASLWNWF | SEQ ID NO:139 |
| | LLELDKWASLWNWF | SEQ ID NO:138 |
| | ELLELDKWASLWNWF | SEQ ID NO:137 |
| 20 | QELLELDKWASLWNWF | SEQ ID NO:136 |
| | EQELLELDKWASLWNWF | SEQ ID NO:135 |
| | NEQELLELDKWASLWNWF | SEQ ID NO:134 |
| | KNEQELLELDKWASLWNWF | SEQ ID NO:133 |
| | EKNEQELLELDKWASLWNWF | SEQ ID NO:132 |
| 25 | QEKNEQELLELDKWASLWNWF | SEQ ID NO:131 |
| | QQEKNEQELLELDKWASLWNWF | SEQ ID NO:130 |
| | NQQEKNEQELLELDKWASLWNWF | SEQ ID NO:129 |
| | QNQQEKNEQELLELDKWASLWNWF | SEQ ID NO:128 |
| | SQNQQEKNEQELLELDKWASLWNWF | SEQ ID NO:127 |
| 30 | ESQNQQEKNEQELLELDKWASLWNWF | SEQ ID NO:126 |

| | | |
|----|--|---------------|
| | EESQNQQEKNEQEELLELDKWASLWNWF_____ | SEQ ID NO:125 |
| | IEESQNQQEKNEQEELLELDKWASLWNWF_____ | SEQ ID NO:124 |
| | LIEESQNQQEKNEQEELLELDKWASLWNWF_____ | SEQ ID NO:123 |
| | SLIEESQNQQEKNEQEELLELDKWASLWNWF_____ | SEQ ID NO:122 |
| 5 | HSLIEESQNQQEKNEQEELLELDKWASLWNWF_____ | SEQ ID NO:121 |
| | IHSLIEESQNQQEKNEQEELLELDKWASLWNWF_____ | SEQ ID NO:120 |
| | LIHSLIEESQNQQEKNEQEELLELDKWASLWNWF_____ | SEQ ID NO:119 |
| | SLIHSLIEESQNQQEKNEQEELLELDKWASLWNWF_____ | SEQ ID NO:118 |
| | TSLIHSLIEESQNQQEKNEQEELLELDKWASLWNWF_____ | SEQ ID NO:117 |
| 10 | YTSLIHSLIEESQNQQEKNEQEELLELDKWASLWNWF_____ | SEQ ID NO:1 |

The one letter amino acid code of Table 1 is used.

TABLE 4

| DP107 CARBOXY TRUNCATIONS | | |
|---------------------------|------------------------------|---------------|
| 5 | NNL | |
| | NNLL | |
| | NNLLR | |
| | NNLLRA | SEQ ID NO:178 |
| | NNLLRAI | SEQ ID NO:177 |
| 10 | NNLLRAIE | SEQ ID NO:176 |
| | NNLLRAIEA | SEQ ID NO:175 |
| | NNLLRAIEAQ | SEQ ID NO:174 |
| | NNLLRAIEAQQ | SEQ ID NO:173 |
| | NNLLRAIEAQQH | SEQ ID NO:172 |
| 15 | NNLLRAIEAQQHL | SEQ ID NO:171 |
| | NNLLRAIEAQQHLL | SEQ ID NO:170 |
| | NNLLRAIEAQQHLLQ | SEQ ID NO:169 |
| | NNLLRAIEAQQHLLQL | SEQ ID NO:168 |
| | NNLLRAIEAQQHLLQLT | SEQ ID NO:167 |
| 20 | NNLLRAIEAQQHLLQLTV | SEQ ID NO:166 |
| | NNLLRAIEAQQHLLQLTVW | SEQ ID NO:165 |
| | NNLLRAIEAQQHLLQLTVWQ | SEQ ID NO:164 |
| | NNLLRAIEAQQHLLQLTVWQI | SEQ ID NO:163 |
| | NNLLRAIEAQQHLLQLTVWQIK | SEQ ID NO:162 |
| 25 | NNLLRAIEAQQHLLQLTVWQIKQ | SEQ ID NO:161 |
| | NNLLRAIEAQQHLLQLTVWQIKQL | SEQ ID NO:160 |
| | NNLLRAIEAQQHLLQLTVWQIKQLQ | SEQ ID NO:159 |
| | NNLLRAIEAQQHLLQLTVWQIKQLQA | SEQ ID NO:158 |
| | NNLLRAIEAQQHLLQLTVWQIKQLQAR | SEQ ID NO:157 |
| 30 | NNLLRAIEAQQHLLQLTVWQIKQLQARI | SEQ ID NO:156 |

| | | |
|----|---|---------------|
| | NNLLRAIEAQQHLLQLTVWQIKQLQARIL_____ | SEQ ID NO:155 |
| | NNLLRAIEAQQHLLQLTVWQIKQLQARILA_____ | SEQ ID NO:154 |
| | NNLLRAIEAQQHLLQLTVWQIKQLQARILAV_____ | SEQ ID NO:153 |
| | NNLLRAIEAQQHLLQLTVWQIKQLQARILAVE_____ | SEQ ID NO:152 |
| 5 | NNLLRAIEAQQHLLQLTVWQIKQLQARILAVER_____ | SEQ ID NO:151 |
| | NNLLRAIEAQQHLLQLTVWQIKQLQARILAVERY_____ | SEQ ID NO:150 |
| | NNLLRAIEAQQHLLQLTVWQIKQLQARILAVERYL_____ | SEQ ID NO:149 |
| | NNLLRAIEAQQHLLQLTVWQIKQLQARILAVERYLK_____ | SEQ ID NO:148 |
| | NNLLRAIEAQQHLLQLTVWQIKQLQARILAVERYLKD_____ | SEQ ID NO:147 |
| 10 | NNLLRAIEAQQHLLQLTVWQIKQLQARILAVERYLKDQ_____ | SEQ ID NO:2 |

The one letter amino acid code of Table 1 is used.

TABLE 5

| DP107 AMINO TRUNCATIONS | | |
|-------------------------|------------------------------|---------------|
| 5 | KDQ | |
| | LKDQ | |
| | YLKDQ | |
| | RYLKDQ | SEQ ID NO:210 |
| | ERYLKDQ | SEQ ID NO:209 |
| 10 | VERYLKDQ | SEQ ID NO:208 |
| | AVERYLKDQ | SEQ ID NO:207 |
| | LAVERYLKDQ | SEQ ID NO:206 |
| | ILAVERYLKDQ | SEQ ID NO:205 |
| | RILAVERYLKDQ | SEQ ID NO:204 |
| 15 | ARILAVERYLKDQ | SEQ ID NO:203 |
| | QARILAVERYLKDQ | SEQ ID NO:202 |
| | LQARILAVERYLKDQ | SEQ ID NO:201 |
| | QLQARILAVERYLKDQ | SEQ ID NO:200 |
| | KQLQARILAVERYLKDQ | SEQ ID NO:199 |
| 20 | IKQLQARILAVERYLKDQ | SEQ ID NO:198 |
| | QIKQLQARILAVERYLKDQ | SEQ ID NO:197 |
| | WQIKQLQARILAVERYLKDQ | SEQ ID NO:196 |
| | VWQIKQLQARILAVERYLKDQ | SEQ ID NO:195 |
| | TVWQIKQLQARILAVERYLKDQ | SEQ ID NO:194 |
| 25 | LTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:193 |
| | QLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:192 |
| | LQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:191 |
| | LLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:190 |
| | HLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:189 |
| 30 | QHLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:188 |

| | | |
|----|--|---------------|
| | QQHLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:187 |
| | AQQHLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:186 |
| | EAQQHLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:185 |
| | IEAQQHLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:184 |
| 5 | AIEAQQHLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:183 |
| | RAIEAQQHLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:182 |
| | LRAIEAQQHLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:181 |
| | LLRAIEAQQHLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:180 |
| | NLLRAIEAQQHLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:179 |
| 10 | NNLLRAIEAQQHLLQLTVWQIKQLQARILAVERYLKDQ | SEQ ID NO:2 |

The one letter amino acid code of Table 1 is used.

TABLE 6

| HIV-2 _{NIHZ} DP178 analog carboxy truncations | | |
|--|------------------------------|---------------|
| 5 | LEA | |
| | LEAN | |
| | LEANI | |
| | LEANIS | SEQ ID NO:240 |
| | LEANISQ | SEQ ID NO:239 |
| 10 | LEANISQS | SEQ ID NO:238 |
| | LEANISQSL | SEQ ID NO:237 |
| | LEANISQSLE | SEQ ID NO:236 |
| | LEANISQSLEQ | SEQ ID NO:235 |
| | LEANISQSLEQA | SEQ ID NO:234 |
| 15 | LEANISQSLEQAQ | SEQ ID NO:233 |
| | LEANISQSLEQAQI | SEQ ID NO:232 |
| | LEANISQSLEQAQIQ | SEQ ID NO:231 |
| | LEANISQSLEQAQIQQ | SEQ ID NO:230 |
| | LEANISQSLEQAQIQQE | SEQ ID NO:229 |
| 20 | LEANISQSLEQAQIQQEK | SEQ ID NO:228 |
| | LEANISQSLEQAQIQQEKN | SEQ ID NO:227 |
| | LEANISQSLEQAQIQQEKNM | SEQ ID NO:226 |
| | LEANISQSLEQAQIQQEKNMY | SEQ ID NO:225 |
| | LEANISQSLEQAQIQQEKNMYE | SEQ ID NO:224 |
| 25 | LEANISQSLEQAQIQQEKNMYEL | SEQ ID NO:223 |
| | LEANISQSLEQAQIQQEKNMYELQ | SEQ ID NO:222 |
| | LEANISQSLEQAQIQQEKNMYELQK | SEQ ID NO:221 |
| | LEANISQSLEQAQIQQEKNMYELQKL | SEQ ID NO:220 |
| | LEANISQSLEQAQIQQEKNMYELQKLN | SEQ ID NO:219 |
| 30 | LEANISQSLEQAQIQQEKNMYELQKLNS | SEQ ID NO:218 |

| | | |
|---|--------------------------------------|----------------------|
| | LEANISQSLEQAQIQQEKNMYELQKLNSW | <u>SEQ ID NO:217</u> |
| | LEANISQSLEQAQIQQEKNMYELQKLNSWD | <u>SEQ ID NO:216</u> |
| | LEANISQSLEQAQIQQEKNMYELQKLNSWDV | <u>SEQ ID NO:215</u> |
| | LEANISQSLEQAQIQQEKNMYELQKLNSWDVF | <u>SEQ ID NO:214</u> |
| 5 | LEANISQSLEQAQIQQEKNMYELQKLNSWDVFT | <u>SEQ ID NO:213</u> |
| | LEANISQSLEQAQIQQEKNMYELQKLNSWDVFTN | <u>SEQ ID NO:212</u> |
| | LEANISQSLEQAQIQQEKNMYELQKLNSWDVFTNW | <u>SEQ ID NO:211</u> |
| | LEANISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL | <u>SEQ ID NO:7</u> |

10 The one letter amino acid code of Table 1 is used.

TABLE 7

| HIV-2 _{NIHZ} DP178 analog amino truncations | | |
|--|------------------------------|---------------|
| 5 | NWL | |
| | TNWL | |
| | FTNWL | |
| | VFTNWL | SEQ ID NO:270 |
| | DVFTNWL | SEQ ID NO:269 |
| 10 | WDVFTNWL | SEQ ID NO:268 |
| | SWDVFTNWL | SEQ ID NO:267 |
| | NSWDVFTNWL | SEQ ID NO:266 |
| | LNSWDVFTNWL | SEQ ID NO:265 |
| | KLNSWDVFTNWL | SEQ ID NO:264 |
| 15 | QKLNSWDVFTNWL | SEQ ID NO:263 |
| | LQKLNSWDVFTNWL | SEQ ID NO:262 |
| | ELQKLNSWDVFTNWL | SEQ ID NO:261 |
| | YELQKLNSWDVFTNWL | SEQ ID NO:260 |
| | MYELQKLNSWDVFTNWL | SEQ ID NO:259 |
| 20 | NMYELQKLNSWDVFTNWL | SEQ ID NO:258 |
| | KNMYELQKLNSWDVFTNWL | SEQ ID NO:257 |
| | EKNMYELQKLNSWDVFTNWL | SEQ ID NO:256 |
| | QEKNMYELQKLNSWDVFTNWL | SEQ ID NO:255 |
| | QQEKNMYELQKLNSWDVFTNWL | SEQ ID NO:254 |
| 25 | IQQEKNMYELQKLNSWDVFTNWL | SEQ ID NO:253 |
| | QIQQEKNMYELQKLNSWDVFTNWL | SEQ ID NO:252 |
| | AQIQQEKNMYELQKLNSWDVFTNWL | SEQ ID NO:251 |
| | QAQIQQEKNMYELQKLNSWDVFTNWL | SEQ ID NO:250 |
| | EQAQIQQEKNMYELQKLNSWDVFTNWL | SEQ ID NO:249 |
| 30 | LEQAQIQQEKNMYELQKLNSWDVFTNWL | SEQ ID NO:248 |

| | | |
|---|--------------------------------------|----------------------|
| | SLEQAQIQQEKNMYELQKLNSWDVFTNWL | <u>SEQ ID NO:247</u> |
| | QSLEQAQIQQEKNMYELQKLNSWDVFTNWL | <u>SEQ ID NO:246</u> |
| | SQSLEQAQIQQEKNMYELQKLNSWDVFTNWL | <u>SEQ ID NO:245</u> |
| | ISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL | <u>SEQ ID NO:244</u> |
| 5 | NISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL | <u>SEQ ID NO:243</u> |
| | ANISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL | <u>SEQ ID NO:242</u> |
| | EANISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL | <u>SEQ ID NO:241</u> |
| | LEANISQSLEQAQIQQEKNMYELQKLNSWDVFTNWL | <u>SEQ ID NO:7</u> |

10 The one letter amino acid code of Table 1 is used.

TABLE 8

| RESPIRATORY SYNCYTIAL VIRUS (RSV) DP107 F2 REGION ANALOG CARBOXY TRUNCATIONS | | |
|---|-----------------------------|---------------|
| 5 | YTS | |
| | YTSV | |
| | YTSVI | |
| | YTSVIT | SEQ ID NO:312 |
| 10 | YTSVITI | SEQ ID NO:311 |
| | YTSVITIE | SEQ ID NO:310 |
| | YTSVITIEL | SEQ ID NO:309 |
| | YTSVITIELS | SEQ ID NO:308 |
| | YTSVITIELSN | SEQ ID NO:307 |
| 15 | YTSVITIELSNI | SEQ ID NO:306 |
| | YTSVITIELSNIK | SEQ ID NO:305 |
| | YTSVITIELSNIKE | SEQ ID NO:304 |
| | YTSVITIELSNIKEN | SEQ ID NO:303 |
| | YTSVITIELSNIKENK | SEQ ID NO:302 |
| 20 | YTSVITIELSNIKENKC | SEQ ID NO:301 |
| | YTSVITIELSNIKENKCN | SEQ ID NO:300 |
| | YTSVITIELSNIKENKCNG | SEQ ID NO:299 |
| | YTSVITIELSNIKENKCNGT | SEQ ID NO:298 |
| | YTSVITIELSNIKENKCNGTD | SEQ ID NO:297 |
| 25 | YTSVITIELSNIKENKCNGTDA | SEQ ID NO:296 |
| | YTSVITIELSNIKENKCNGTDAK | SEQ ID NO:295 |
| | YTSVITIELSNIKENKCNGTDAKV | SEQ ID NO:294 |
| | YTSVITIELSNIKENKCNGTDAKVK | SEQ ID NO:293 |
| | YTSVITIELSNIKENKCNGTDAKVKL | SEQ ID NO:292 |
| 30 | YTSVITIELSNIKENKCNGTDAKVCLI | SEQ ID NO:291 |

| | | |
|----|---|---------------|
| | YTSVITIELSNIKENKCNGTDAKVKLIK_____ | SEQ ID NO:290 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQ_____ | SEQ ID NO:289 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQE_____ | SEQ ID NO:288 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQEL_____ | SEQ ID NO:287 |
| 5 | YTSVITIELSNIKENKCNGTDAKVKLIKQELD_____ | SEQ ID NO:286 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDK_____ | SEQ ID NO:285 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKY_____ | SEQ ID NO:284 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYK_____ | SEQ ID NO:283 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKN_____ | SEQ ID NO:282 |
| 10 | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNA_____ | SEQ ID NO:281 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAV_____ | SEQ ID NO:280 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTE_____ | SEQ ID NO:279 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTE_____ | SEQ ID NO:278 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTEL_____ | SEQ ID NO:277 |
| 15 | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQ_____ | SEQ ID NO:276 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQL_____ | SEQ ID NO:275 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLL_____ | SEQ ID NO:274 |
| 20 | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLM_____ | SEQ ID NO:273 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQ_____ | SEQ ID NO:272 |
| 25 | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQS_____ | SEQ ID NO:271 |
| | YTSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST_____ | SEQ ID NO:13 |

TABLE 9

| RESPIRATORY SYNCYTIAL VIRUS (RSV) DP107 F2 | | |
|--|-----------------------------|---------------|
| REGION ANALOG AMINO TRUNCATIONS | | |
| 5 | QST | |
| | MQST | |
| | LMQST | |
| | LLMQST | SEQ ID NO:353 |
| 10 | QLLMQST | SEQ ID NO:352 |
| | LQLLMQST | SEQ ID NO:351 |
| | ELQLLMQST | SEQ ID NO:350 |
| | TELQLLMQST | SEQ ID NO:349 |
| | VTELQLLMQST | SEQ ID NO:348 |
| 15 | AVTELQLLMQST | SEQ ID NO:347 |
| | NAVTELQLLMQST | SEQ ID NO:346 |
| | KNAVTELQLLMQST | SEQ ID NO:345 |
| | YKNAVTELQLLMQST | SEQ ID NO:344 |
| | KYKNAVTELQLLMQST | SEQ ID NO:343 |
| 20 | DKYKNAVTELQLLMQST | SEQ ID NO:342 |
| | LDKYKNAVTELQLLMQST | SEQ ID NO:341 |
| | ELDKYKNAVTELQLLMQST | SEQ ID NO:340 |
| | QELDKYKNAVTELQLLMQST | SEQ ID NO:339 |
| | KQELDKYKNAVTELQLLMQST | SEQ ID NO:338 |
| 25 | IKQELDKYKNAVTELQLLMQST | SEQ ID NO:337 |
| | LIKQELDKYKNAVTELQLLMQST | SEQ ID NO:336 |
| | KLIKQELDKYKNAVTELQLLMQST | SEQ ID NO:335 |
| | VKLIKQELDKYKNAVTELQLLMQST | SEQ ID NO:334 |
| | KVKLIKQELDKYKNAVTELQLLMQST | SEQ ID NO:333 |
| 30 | AKVKLIKQELDKYKNAVTELQLLMQST | SEQ ID NO:332 |

| | | |
|----|---|----------------------|
| | DAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:331</u> |
| | TDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:330</u> |
| | GTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:329</u> |
| | NGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:328</u> |
| 5 | CNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:327</u> |
| | KCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:326</u> |
| | NKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:325</u> |
| | KENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:324</u> |
| | IKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:323</u> |
| 10 | NIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:322</u> |
| | SNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:321</u> |
| | LSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:320</u> |
| | ELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:319</u> |
| 15 | IELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:318</u> |
| | TIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:317</u> |
| 20 | ITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:316</u> |
| | VITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:315</u> |
| | SVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:314</u> |
| 25 | TSVITIELSNIKENKCNGTDAKVKLIKQELDKYKNAVTELQLLMQST | <u>SEQ ID NO:313</u> |

The one letter amino acid code of Table 1 is used.

TABLE 10

| RESPIRATORY SYNCYTIAL VIRUS (RSV) F1 DP178 | | |
|--|-----------------------------|---------------|
| REGION ANALOG CARBOXY TRUNCATIONS | | |
| 5 | FYD | |
| | FYDP | |
| | FYDPL | |
| | FYDPLV | SEQ ID NO:385 |
| 10 | FYDPLVF | SEQ ID NO:384 |
| | FYDPLVFP | SEQ ID NO:383 |
| | FYDPLVFPS | SEQ ID NO:382 |
| | FYDPLVFPSD | SEQ ID NO:381 |
| | FYDPLVFPSDE | SEQ ID NO:380 |
| 15 | FYDPLVFPSDEF | SEQ ID NO:379 |
| | FYDPLVFPSDEFD | SEQ ID NO:378 |
| | FYDPLVFPSDEFDA | SEQ ID NO:377 |
| | FYDPLVFPSDEFDAS | SEQ ID NO:376 |
| | FYDPLVFPSDEFDASI | SEQ ID NO:375 |
| 20 | FYDPLVFPSDEFDASIS | SEQ ID NO:374 |
| | FYDPLVFPSDEFDASISQ | SEQ ID NO:373 |
| | FYDPLVFPSDEFDASISQV | SEQ ID NO:372 |
| | FYDPLVFPSDEFDASISQVN | SEQ ID NO:371 |
| | FYDPLVFPSDEFDASISQVNE | SEQ ID NO:370 |
| 25 | FYDPLVFPSDEFDASISQVNEK | SEQ ID NO:369 |
| | FYDPLVFPSDEFDASISQVNEKI | SEQ ID NO:368 |
| | FYDPLVFPSDEFDASISQVNEKIN | SEQ ID NO:367 |
| | FYDPLVFPSDEFDASISQVNEKINQ | SEQ ID NO:366 |
| | FYDPLVFPSDEFDASISQVNEKINQS | SEQ ID NO:365 |
| 30 | FYDPLVFPSDEFDASISQVNEKINQSL | SEQ ID NO:364 |

| | | |
|----|--|---------------|
| | FYDPLVFPSDEFDASISQVNEKINQSLA_____ | SEQ ID NO:363 |
| | FYDPLVFPSDEFDASISQVNEKINQSLAF_____ | SEQ ID NO:362 |
| | FYDPLVFPSDEFDASISQVNEKINQSLAFI_____ | SEQ ID NO:361 |
| | FYDPLVFPSDEFDASISQVNEKINQSLAFIR_____ | SEQ ID NO:360 |
| 5 | FYDPLVFPSDEFDASISQVNEKINQSLAFIRK_____ | SEQ ID NO:359 |
| | FYDPLVFPSDEFDASISQVNEKINQSLAFIRKS_____ | SEQ ID NO:358 |
| | FYDPLVFPSDEFDASISQVNEKINQSLAFIRKSD_____ | SEQ ID NO:357 |
| | FYDPLVFPSDEFDASISQVNEKINQSLAFIRKSDE_____ | SEQ ID NO:356 |
| | FYDPLVFPSDEFDASISQVNEKINQSLAFIRKSDEL_____ | SEQ ID NO:355 |
| 10 | FYDPLVFPSDEFDASISQVNEKINQSLAFIRKSDELL_____ | SEQ ID NO:354 |

The one letter amino acid code of Table 1 is used.

TABLE 11

| RESPIRATORY SYNCYTIAL VIRUS (RSV) F1 DP178 | | |
|--|------------------------------|---------------|
| REGION ANALOG AMINO TRUNCATIONS | | |
| 5 | DELL | |
| | SDELL | |
| | KSDELL | SEQ ID NO:416 |
| | RKSDELL | SEQ ID NO:415 |
| 10 | IRKSDELL | SEQ ID NO:414 |
| | FIRKSDELL | SEQ ID NO:413 |
| | AFIRKSDELL | SEQ ID NO:412 |
| | LAFIRKSDELL | SEQ ID NO:411 |
| | SLAFIRKSDELL | SEQ ID NO:410 |
| 15 | QSLAFIRKSDELL | SEQ ID NO:409 |
| | NQSLAFIRKSDELL | SEQ ID NO:408 |
| | INQSLAFIRKSDELL | SEQ ID NO:407 |
| | KINQSLAFIRKSDELL | SEQ ID NO:406 |
| | EKINQSLAFIRKSDELL | SEQ ID NO:405 |
| 20 | NEKINQSLAFIRKSDELL | SEQ ID NO:404 |
| | VNEKINQSLAFIRKSDELL | SEQ ID NO:403 |
| | QVNEKINQSLAFIRKSDELL | SEQ ID NO:402 |
| | SQVNEKINQSLAFIRKSDELL | SEQ ID NO:401 |
| | ISQVNEKINQSLAFIRKSDELL | SEQ ID NO:400 |
| 25 | SISQVNEKINQSLAFIRKSDELL | SEQ ID NO:399 |
| | ASISQVNEKINQSLAFIRKSDELL | SEQ ID NO:398 |
| | DASISQVNEKINQSLAFIRKSDELL | SEQ ID NO:397 |
| | FDASISQVNEKINQSLAFIRKSDELL | SEQ ID NO:396 |
| | EFDASISQVNEKINQSLAFIRKSDELL | SEQ ID NO:395 |
| 30 | DEFDASISQVNEKINQSLAFIRKSDELL | SEQ ID NO:394 |

| | | |
|---|---|---------------|
| | SDEFDASISQVNEKINQSLAFIRKSDELL_____ | SEQ ID NO:393 |
| | PSDEFDASISQVNEKINQSLAFIRKSDELL_____ | SEQ ID NO:392 |
| | FPSDEFDASISQVNEKINQSLAFIRKSDELL_____ | SEQ ID NO:391 |
| | VFPSDEFDASISQVNEKINQSLAFIRKSDELL_____ | SEQ ID NO:390 |
| 5 | LVFPSDEFDASISQVNEKINQSLAFIRKSDELL_____ | SEQ ID NO:389 |
| | PLVFPSDEFDASISQVNEKINQSLAFIRKSDELL_____ | SEQ ID NO:388 |
| | DPLVFPSDEFDASISQVNEKINQSLAFIRKSDELL_____ | SEQ ID NO:387 |
| | YDPLVFPSDEFDASISQVNEKINQSLAFIRKSDELL_____ | SEQ ID NO:386 |

10 The one letter amino acid code of Table 1 is used.

TABLE 12

| HUMAN PARAINFLUENZA VIRUS 3 (HPV3) F1 REGION DP178 | | |
|--|-----------------------------|---------------|
| ANALOG CARBOXY TRUNCATIONS | | |
| 5 | ITL | |
| | ITLN | |
| | ITLNN | |
| | ITLNNS | SEQ ID NO:446 |
| 10 | ITLNNSV | SEQ ID NO:445 |
| | ITLNNSVA | SEQ ID NO:444 |
| | ITLNNSVAL | SEQ ID NO:443 |
| | ITLNNSVALD | SEQ ID NO:442 |
| | ITLNNSVALDP | SEQ ID NO:441 |
| 15 | ITLNNSVALDPI | SEQ ID NO:440 |
| | ITLNNSVALDPID | SEQ ID NO:439 |
| | ITLNNSVALDPIDI | SEQ ID NO:438 |
| | ITLNNSVALDPIDIS | SEQ ID NO:437 |
| | ITLNNSVALDPIDISI | SEQ ID NO:436 |
| 20 | ITLNNSVALDPIDISIE | SEQ ID NO:435 |
| | ITLNNSVALDPIDISIEL | SEQ ID NO:434 |
| | ITLNNSVALDPIDISIELN | SEQ ID NO:433 |
| | ITLNNSVALDPIDISIELNK | SEQ ID NO:432 |
| | ITLNNSVALDPIDISIELNKA | SEQ ID NO:431 |
| 25 | ITLNNSVALDPIDISIELNKAK | SEQ ID NO:430 |
| | ITLNNSVALDPIDISIELNKAKS | SEQ ID NO:429 |
| | ITLNNSVALDPIDISIELNKAKSD | SEQ ID NO:428 |
| | ITLNNSVALDPIDISIELNKAKSDL | SEQ ID NO:427 |
| | ITLNNSVALDPIDISIELNKAKSDLE | SEQ ID NO:426 |
| 30 | ITLNNSVALDPIDISIELNKAKSDLEE | SEQ ID NO:425 |

| | | |
|---|---|---------------|
| | ITLNNSVALDPIDISIELNKA K SDLEES_____ | SEQ ID NO:424 |
| | ITLNNSVALDPIDISIELNKA K SDLEESK_____ | SEQ ID NO:423 |
| | ITLNNSVALDPIDISIELNKA K SDLEESKE_____ | SEQ ID NO:422 |
| | ITLNNSVALDPIDISIELNKA K SDLEESKEW_____ | SEQ ID NO:421 |
| 5 | ITLNNSVALDPIDISIELNKA K SDLEESKEWI_____ | SEQ ID NO:420 |
| | ITLNNSVALDPIDISIELNKA K SDLEESKEWIR_____ | SEQ ID NO:419 |
| | ITLNNSVALDPIDISIELNKA K SDLEESKEWIRR_____ | SEQ ID NO:418 |
| | ITLNNSVALDPIDISIELNKA K SDLEESKEWIRRS_____ | SEQ ID NO:417 |

10 The one letter amino acid code of Table 1 is used.

TABLE 13

| HUMAN PARAINFLUENZA VIRUS 3 (HPV3) F1 REGION DP178 | | |
|--|-----------------------------|----------------|
| ANALOG AMINO TRUNCATIONS | | |
| 5 | RRS | |
| | IRRS | |
| | WIRRS | |
| | EWIRRS | SEQ ID NO :475 |
| 10 | KEWIRRS | SEQ ID NO :474 |
| | SKEWIRRS | SEQ ID NO :473 |
| | ESKEWIRRS | SEQ ID NO :472 |
| | EESKEWIRRS | SEQ ID NO :471 |
| | LEESKEWIRRS | SEQ ID NO :470 |
| 15 | DLEESKEWIRRS | SEQ ID NO :469 |
| | SDLEESKEWIRRS | SEQ ID NO :468 |
| | KSDLEESKEWIRRS | SEQ ID NO :467 |
| | AKSDLEESKEWIRRS | SEQ ID NO :466 |
| | KAKSDLEESKEWIRRS | SEQ ID NO :465 |
| 20 | NKAKSDLEESKEWIRRS | SEQ ID NO :464 |
| | LNKAKSDLEESKEWIRRS | SEQ ID NO :463 |
| | ELNKAKSDLEESKEWIRRS | SEQ ID NO :462 |
| | IELNKAKSDLEESKEWIRRS | SEQ ID NO :461 |
| | SIELNKAKSDLEESKEWIRRS | SEQ ID NO :460 |
| 25 | ISIELNKAKSDLEESKEWIRRS | SEQ ID NO :459 |
| | DISIELNKAKSDLEESKEWIRRS | SEQ ID NO :458 |
| | IDISIELNKAKSDLEESKEWIRRS | SEQ ID NO :457 |
| | PIDISIELNKAKSDLEESKEWIRRS | SEQ ID NO :456 |
| | DPIDISIELNKAKSDLEESKEWIRRS | SEQ ID NO :455 |
| 30 | LDPIDISIELNKAKSDLEESKEWIRRS | SEQ ID NO :454 |

| | | |
|---|---|-----------------------|
| | ALDPIDISIELNKA K SDLEESKEWIRRS | <u>SEQ ID NO :453</u> |
| | VALDPIDISIELNKA K SDLEESKEWIRRS | <u>SEQ ID NO :452</u> |
| | SVALDPIDISIELNKA K SDLEESKEWIRRS | <u>SEQ ID NO :451</u> |
| | NSVALDPIDISIELNKA K SDLEESKEWIRRS | <u>SEQ ID NO :450</u> |
| 5 | NNSVALDPIDISIELNKA K SDLEESKEWIRRS | <u>SEQ ID NO :449</u> |
| | LNNSVALDPIDISIELNKA K SDLEESKEWIRRS | <u>SEQ ID NO :448</u> |
| | TLNNSVALDPIDISIELNKA K SDLEESKEWIRRS | <u>SEQ ID NO :447</u> |

The one letter amino acid code of Table 1 is used.

TABLE 14

| HUMAN PARAINFLUENZA VIRUS 3 (HPV3) F1 REGION | | |
|--|----------------------------|---------------|
| DP107 ANALOG CARBOXY TRUNCATIONS | | |
| 5 | ALG | |
| | ALGV | |
| | ALGVA | |
| | ALGVAT | SEQ ID NO:504 |
| 10 | ALGVATS | SEQ ID NO:503 |
| | ALGVATSA | SEQ ID NO:502 |
| | ALGVATSAQ | SEQ ID NO:501 |
| | ALGVATSAQI | SEQ ID NO:500 |
| | ALGVATSAQIT | SEQ ID NO:499 |
| 15 | ALGVATSAQITA | SEQ ID NO:498 |
| | ALGVATSAQITAA | SEQ ID NO:497 |
| | ALGVATSAQITAAV | SEQ ID NO:496 |
| | ALGVATSAQITAAVA | SEQ ID NO:495 |
| | ALGVATSAQITAVAL | SEQ ID NO:494 |
| 20 | ALGVATSAQITAVALV | SEQ ID NO:493 |
| | ALGVATSAQITAVALVE | SEQ ID NO:492 |
| | ALGVATSAQITAVALVEA | SEQ ID NO:491 |
| | ALGVATSAQITAVALVEAK | SEQ ID NO:490 |
| | ALGVATSAQITAVALVEAKQ | SEQ ID NO:489 |
| 25 | ALGVATSAQITAVALVEAKQA | SEQ ID NO:488 |
| | ALGVATSAQITAVALVEAKQAR | SEQ ID NO:487 |
| | ALGVATSAQITAVALVEAKQARS | SEQ ID NO:486 |
| | ALGVATSAQITAVALVEAKQARSD | SEQ ID NO:485 |
| | ALGVATSAQITAVALVEAKQARSDI | SEQ ID NO:484 |
| 30 | ALGVATSAQITAVALVEAKQARSDIE | SEQ ID NO:483 |

| | | |
|---|--|---------------|
| | ALGVATSAQITA AVALVEAKQARSDIEK_____ | SEQ ID NO:482 |
| | ALGVATSAQITA AVALVEAKQARSDIEKL_____ | SEQ ID NO:481 |
| | ALGVATSAQITA AVALVEAKQARSDIEKLK_____ | SEQ ID NO:480 |
| | ALGVATSAQITA AVALVEAKQARSDIEKLKE_____ | SEQ ID NO:479 |
| 5 | ALGVATSAQITA AVALVEAKQARSDIEKLKEA_____ | SEQ ID NO:478 |
| | ALGVATSAQITA AVALVEAKQARSDIEKLKEAI_____ | SEQ ID NO:477 |
| | ALGVATSAQITA AVALVEAKQARSDIEKLKEAIR_____ | SEQ ID NO:476 |

The one letter amino acid code of Table 1 is used.

TABLE 15

| HUMAN PARAINFLUENZA VIRUS 3 (HPV3) F1 REGION | | |
|--|-----------------------------|---------------|
| DP107 ANALOG AMINO TRUNCATIONS | | |
| 5 | IRD | |
| | AIRD | |
| | EAIRD | |
| | KEAIRD | SEQ ID NO:533 |
| 10 | LKEAIRD | SEQ ID NO:532 |
| | KLKEAIRD | SEQ ID NO:531 |
| | EKLKEAIRD | SEQ ID NO:530 |
| | IEKLKEAIRD | SEQ ID NO:529 |
| | DIEKLKEAIRD | SEQ ID NO:528 |
| 15 | SDIEKLKEAIRD | SEQ ID NO:527 |
| | RSDIEKLKEAIRD | SEQ ID NO:526 |
| | ARSDIEKLKEAIRD | SEQ ID NO:525 |
| | QARSDIEKLKEAIRD | SEQ ID NO:524 |
| | KQARSDIEKLKEAIRD | SEQ ID NO:523 |
| 20 | AKQARSDIEKLKEAIRD | SEQ ID NO:522 |
| | EAKQARSDIEKLKEAIRD | SEQ ID NO:521 |
| | VEAKQARSDIEKLKEAIRD | SEQ ID NO:520 |
| | LVEAKQARSDIEKLKEAIRD | SEQ ID NO:519 |
| | ALVEAKQARSDIEKLKEAIRD | SEQ ID NO:518 |
| 25 | VALVEAKQARSDIEKLKEAIRD | SEQ ID NO:517 |
| | AVALVEAKQARSDIEKLKEAIRD | SEQ ID NO:516 |
| | AAVALVEAKQARSDIEKLKEAIRD | SEQ ID NO:515 |
| | TAAVALVEAKQARSDIEKLKEAIRD | SEQ ID NO:514 |
| | ITAAVALVEAKQARSDIEKLKEAIRD | SEQ ID NO:513 |
| 30 | QITAAVALVEAKQARSDIEKLKEAIRD | SEQ ID NO:512 |

| | | |
|---|--|---------------|
| | AQITA AVALVEAKQARSDIEKLKEAIRD_____ | SEQ ID NO:511 |
| | SAQITA AVALVEAKQARSDIEKLKEAIRD_____ | SEQ ID NO:510 |
| | TSAQITA AVALVEAKQARSDIEKLKEAIRD_____ | SEQ ID NO:509 |
| | ATSAQITA AVALVEAKQARSDIEKLKEAIRD_____ | SEQ ID NO:508 |
| 5 | VATSAQITA AVALVEAKQARSDIEKLKEAIRD_____ | SEQ ID NO:507 |
| | GVATSAQITA AVALVEAKQARSDIEKLKEAIRD_____ | SEQ ID NO:506 |
| | LGVATSAQITA AVALVEAKQARSDIEKLKEAIRD_____ | SEQ ID NO:505 |

The one letter amino acid code of Table 1 is used.

TABLE 16

| ANTI-RESPIRATORY SYNCYTIAL VIRUS (RSV) PEPTIDES | |
|---|---|
| 5 | TSVITIELSNIKENKCNGTDAKVKLIKQELDKYKN <u>SEQ ID NO:15</u> |
| | SVITIELSNIKENKCNGTDAKVKLIKQELDKYKNA <u>SEQ ID NO:16</u> |
| | VITIELSNIKENKCNGTDAKVKLIKQELDKYKNAV <u>SEQ ID NO:17</u> |
| | VAVSKVLHLEGEVNKIALSTNKAVVSLNGVS <u>SEQ ID NO:18</u> |
| | AVSKVLHLEGEVNKIALSTNKAVVSLNGVSV <u>SEQ ID NO:19</u> |
| 10 | VSKVLHLEGEVNKIALSTNKAVVSLNGVSVL <u>SEQ ID NO:20</u> |
| | SKVLHLEGEVNKIALSTNKAVVSLNGVSVLT <u>SEQ ID NO:21</u> |
| | KVLHLEGEVNKIALSTNKAVVSLNGVSVLTS <u>SEQ ID NO:22</u> |
| | LEGEVNKIALSTNKAVVSLNGVSVLTSKVLD <u>SEQ ID NO:23</u> |
| | GEVNKIALSTNKAVVSLNGVSVLTSKVLDLK <u>SEQ ID NO:24</u> |
| 15 | EVNKIALSTNKAVVSLNGVSVLTSKVLDLKN <u>SEQ ID NO:25</u> |
| | VNKIALSTNKAVVSLNGVSVLTSKVLDLKNY <u>SEQ ID NO:26</u> |
| | NKIALSTNKAVVSLNGVSVLTSKVLDLKNYI <u>SEQ ID NO:27</u> |
| | KIALSTNKAVVSLNGVSVLTSKVLDLKNYID <u>SEQ ID NO:28</u> |
| | IALLSTNKAVVSLNGVSVLTSKVLDLKNYIDK <u>SEQ ID NO:29</u> |
| 20 | ALLSTNKAVVSLNGVSVLTSKVLDLKNYIDKQ <u>SEQ ID NO:30</u> |
| | VAVSKVLHLEGEVNKIALSTNKAVVSLNGVS <u>SEQ ID NO:18</u> |
| | AVSKVLHLEGEVNKIALSTNKAVVSLNGVSV <u>SEQ ID NO:19</u> |
| | VSKVLHLEGEVNKIALSTNKAVVSLNGVSVL <u>SEQ ID NO:20</u> |
| | SKVLHLEGEVNKIALSTNKAVVSLNGVSVLT <u>SEQ ID NO:21</u> |
| 25 | KVLHLEGEVNKIALSTNKAVVSLNGVSVLTS <u>SEQ ID NO:22</u> |
| | LEGEVNKIALSTNKAVVSLNGVSVLTSKVLD <u>SEQ ID NO:23</u> |
| | GEVNKIALSTNKAVVSLNGVSVLTSKVLDLK <u>SEQ ID NO:24</u> |
| | EVNKIALSTNKAVVSLNGVSVLTSKVLDLKN <u>SEQ ID NO:25</u> |
| | VNKIALSTNKAVVSLNGVSVLTSKVLDLKNY <u>SEQ ID NO:26</u> |
| 30 | NKIALSTNKAVVSLNGVSVLTSKVLDLKNYI <u>SEQ ID NO:27</u> |

KIALSTNKAVVSL SNGVSVLT SKVLDLKNYID SEQ ID NO:28

IALSTNKAVVSL SNGVSVLT SKVLDLKNYIDK SEQ ID NO:29

ALLSTNKAVVSL SNGVSVLT SKVLDLKNYIDKQ SEQ ID NO:30

5 The one letter amino acid code of Table 1 is used.

TABLE 17

ANTI-HUMAN PARAINFLUENZA VIRUS 3 (HPV3) PEPTIDES

| | | |
|----|--|---------------------|
| 5 | TLNNSVALDPIDISIELNKA ⁵ AKSDLEESKEWIRRSN | <u>SEQ ID NO:33</u> |
| | LNNSVALDPIDISIELNKA ¹⁰ AKSDLEESKEWIRRSNQ | <u>SEQ ID NO:34</u> |
| | NNSVALDPIDISIELNKA ¹⁵ AKSDLEESKEWIRRSNQK | <u>SEQ ID NO:35</u> |
| | NSVALDPIDISIELNKA ²⁰ AKSDLEESKEWIRRSNQKL | <u>SEQ ID NO:36</u> |
| | SVALDPIDISIELNKA ²⁵ AKSDLEESKEWIRRSNQKLD | <u>SEQ ID NO:37</u> |
| 10 | VALDPIDISIELNKA ³⁰ AKSDLEESKEWIRRSNQKLDS | <u>SEQ ID NO:38</u> |
| | ALDPIDISIELNKA ³⁵ AKSDLEESKEWIRRSNQKLDSI | <u>SEQ ID NO:39</u> |
| | LDPIDISIELNKA ⁴⁰ AKSDLEESKEWIRRSNQKLDSIG | <u>SEQ ID NO:40</u> |
| | DPIDISIELNKA ⁴⁵ AKSDLEESKEWIRRSNQKLDSIGN | <u>SEQ ID NO:41</u> |
| | PIDISIELNKA ⁵⁰ AKSDLEESKEWIRRSNQKLDSIGNW | <u>SEQ ID NO:42</u> |
| 15 | IDISIELNKA ⁵⁵ AKSDLEESKEWIRRSNQKLDSIGNWH | <u>SEQ ID NO:43</u> |
| | DISIELNKA ⁶⁰ AKSDLEESKEWIRRSNQKLDSIGNWHQ | <u>SEQ ID NO:44</u> |
| | ISIELNKA ⁶⁵ AKSDLEESKEWIRRSNQKLDSIGNWHQS | <u>SEQ ID NO:45</u> |
| | SIELNKA ⁷⁰ AKSDLEESKEWIRRSNQKLDSIGNWHQSS | <u>SEQ ID NO:46</u> |
| | IELNKA ⁷⁵ AKSDLEESKEWIRRSNQKLDSIGNWHQSST | <u>SEQ ID NO:47</u> |
| 20 | ELNKA ⁸⁰ AKSDLEESKEWIRRSNQKLDSIGNWHQSSTT | <u>SEQ ID NO:48</u> |
| | TAAVALVEAKQARSDIEKLKEAIRD ⁸⁵ TNKAVQSVQS | <u>SEQ ID NO:49</u> |
| | AVALVEAKQARSDIEKLKEAIRD ⁹⁰ TNKAVQSVQSSI | <u>SEQ ID NO:50</u> |
| | LVEAKQARSDIEKLKEAIRD ⁹⁵ TNKAVQSVQSSIGNL | <u>SEQ ID NO:51</u> |
| | VEAKQARSDIEKLKEAIRD ¹⁰⁰ TNKAVQSVQSSIGNLI | <u>SEQ ID NO:52</u> |
| 25 | EAKQARSDIEKLKEAIRD ¹⁰⁵ TNKAVQSVQSSIGNLIV | <u>SEQ ID NO:53</u> |
| | AKQARSDIEKLKEAIRD ¹¹⁰ TNKAVQSVQSSIGNLIVA | <u>SEQ ID NO:54</u> |
| | KQARSDIEKLKEAIRD ¹¹⁵ TNKAVQSVQSSIGNLIVAI | <u>SEQ ID NO:55</u> |
| | QARSDIEKLKEAIRD ¹²⁰ TNKAVQSVQSSIGNLIVA ⁵ IK | <u>SEQ ID NO:56</u> |
| | ARSDIEKLKEAIRD ¹²⁵ TNKAVQSVQSSIGNLIVA ¹⁰ IKS | <u>SEQ ID NO:57</u> |
| 30 | RSDIEKLKEAIRD ¹³⁰ TNKAVQSVQSSIGNLIVA ¹⁵ IKSV | <u>SEQ ID NO:58</u> |

SDIEKLKEAIRDTNKAVQSVQSSIGNLIVAIKSVQ SEQ ID NO:59

KLKEAIRDTNKAVQSVQSSIGNLIVAIKSVQDYVN SEQ ID NO:60

LKEAIRDTNKAVQSVQSSIGNLIVAIKSVQDYVNK SEQ ID NO:61

AIRDTNKAVQSVQSSIGNLIVAIKSVQDYVNKEIV SEQ ID NO:62

5

The one letter amino acid code of Table 1 is used.

TABLE 18

ANTI-SIMIAN IMMUNODEFICIENCY VIRUS (SIV) PEPTIDES

| | | |
|----|--|---------------------|
| 5 | WQEWERKVDVFLEENITALLEEAIQQEKNMYELQK_____ | <u>SEQ ID NO:64</u> |
| | QEWERKVDVFLEENITALLEEAIQQEKNMYELQKL_____ | <u>SEQ ID NO:65</u> |
| | EWERKVDVFLEENITALLEEAIQQEKNMYELQKLN_____ | <u>SEQ ID NO:66</u> |
| | WERKVDVFLEENITALLEEAIQQEKNMYELQKLNS_____ | <u>SEQ ID NO:67</u> |
| | ERKVDVFLEENITALLEEAIQQEKNMYELQKLNSW_____ | <u>SEQ ID NO:68</u> |
| 10 | RKVDVFLEENITALLEEAIQQEKNMYELQKLNSWD_____ | <u>SEQ ID NO:69</u> |
| | KVDVFLEENITALLEEAIQQEKNMYELQKLNSWDV_____ | <u>SEQ ID NO:70</u> |
| | VDVFLEENITALLEEAIQQEKNMYELQKLNSWDVF_____ | <u>SEQ ID NO:71</u> |
| | DFLEENITALLEEAIQQEKNMYELQKLNSWDVFG_____ | <u>SEQ ID NO:72</u> |
| | FLEENITALLEEAIQQEKNMYELQKLNSWDVFGN_____ | <u>SEQ ID NO:73</u> |

15

The one letter amino acid code of Table 1 is used.

TABLE 19

| ANTI-MEASLES VIRUS (MEV) PEPTIDES | | |
|-----------------------------------|------------------------------------|--------------|
| 5 | LHRIDLGPPISLERLDVGTNLGNAIAKLEAKELL | SEQ ID NO:76 |
| | HRIDLGPPISLERLDVGTNLGNAIAKLEAKELLE | SEQ ID NO:77 |
| | RIDLGPPISLERLDVGTNLGNAIAKLEAKELLES | SEQ ID NO:78 |
| | IDLGPPISLERLDVGTNLGNAIAKLEAKELLESS | SEQ ID NO:79 |
| | DLGPPISLERLDVGTNLGNAIAKLEAKELLESSD | SEQ ID NO:80 |
| 10 | LGPPISLERLDVGTNLGNAIAKLEAKELLESSDQ | SEQ ID NO:81 |
| | GPPISLERLDVGTNLGNAIAKLEAKELLESSDQI | SEQ ID NO:82 |
| | PPISLERLDVGTNLGNAIAKLEAKELLESSDQIL | SEQ ID NO:83 |
| | PISLERLDVGTNLGNAIAKLEAKELLESSDQILR | SEQ ID NO:84 |
| | SLERLDVGTNLGNAIAKLEAKELLESSDQILRSM | SEQ ID NO:85 |
| 15 | LERLDVGTNLGNAIAKLEAKELLESSDQILRSMK | SEQ ID NO:86 |

The one letter amino acid code of Table 1 is used.